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NOTICE OF ALLOWANCE AND FEE(S) DUE

32172 7590 08/05/2010

DICKSTEIN SHAPIRO LLP
1633 Broadway
NEW YORK, NY 10019

EXAMINER

LEE, JUSTIN YE

ART UNIT

PAPER NUMBER

2617

DATE MAILED: 08/05/2010

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/726,707	12/04/2003	Yoshinori Watanabe	U2054.0145	7043

TITLE OF INVENTION: RECEPTION DETERMINATION METHOD AND SYSTEM OF RAY, AND RADIO WAVE PROPAGATION
CHARACTERISTIC ESTIMATION METHOD USING THEM

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	11/05/2010

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. **PROSECUTION ON THE MERITS IS CLOSED.** THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN **THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE** OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. **THIS STATUTORY PERIOD CANNOT BE EXTENDED.** SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail** **Mail Stop ISSUE FEE**
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INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

32172 7590 08/05/2010

DICKSTEIN SHAPIRO LLP
1633 Broadway
NEW YORK, NY 10019

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/726,707 12/04/2003

Yoshinori Watanabe

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nonprovisional	NO	\$1510	\$300	\$0	\$1810	11/05/2010

EXAMINER	ART UNIT	CLASS-SUBCLASS
LEE, JUSTIN YE	2617	455-423000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB-122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB-47; Rev. 03-02 or more recent) attached. Use of a **Customer Number is required.**

2. For printing on the patent front page, list

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,

1

(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

2

3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
☐ Publication Fee (No small entity discount permitted)
☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____ Date _____
Typed or printed name _____ Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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DICKSTEIN SHAPIRO LLP			LEE, JUSTIN YE	
1633 Broadway			ART UNIT	PAPER NUMBER
NEW YORK, NY 10019			2617	

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Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 1217 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 1217 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability**Application No.**

10/726,707

Examiner

Justin Y. Lee

Applicant(s)

WATANABE, YOSHINORI

Art Unit

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed on 6/2/10.
2. ☒ The allowed claim(s) is/are 2-13 and 15-26.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

/Justin Y Lee/
Examiner, Art Unit 2617

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Richard LaCava on 7/20/10.

The application has been amended as follows:

13. (Currently amended) A radio wave propagation characteristic estimation method characterized in that ~~estimation of radio wave propagation in an observation region is made by:~~

estimation of radio wave propagation in an observation region is made by
predicting a path of a ray provided within said observation region ~~is predicted~~, and reception determination processing is applied to reception points of said ray, which are arranged in advance within said observation region,

characterized in that the reception points arranged within said observation region are divided into groups for singular or plural reception points, and said reception determination processing is applied to reception point groups including the reception points to which said reception determination processing is needed to be applied.

26. (Currently amended) A radio wave propagation characteristic estimation system characterized in that ~~estimation of radio wave propagation in an observation~~

~~region is made by using the reception determination system of a ray, in which a path of a ray provided within said observation region is predicted, and reception determination processing is applied to reception points of said ray, which are arranged in advance within said observation region, said radio wave propagation characteristic estimation system [[comprises]] comprising:~~

a reception determination system of a ray, in which a path of a ray provided within an observation region is predicted, and reception determination processing is applied to reception points of said ray, which are arranged in advance within said observation region;

grouping means for grouping the reception points arranged within said observation region for singular or plural reception points; and
reception determination means for applying said reception determination processing to reception point groups including the reception points to which said reception determination processing is needed to be applied.

Allowable Subject Matter

Claims 2-13 and 15-26 are allowed.

The following is an examiner's statement of reasons for allowance:

Applicant's independent claim 2 is drawn to a reception determination method of a ray in which, a path of a ray provided within an observation region is predicted, and reception determination processing is applied to reception points of said ray, which are arranged in advance within said observation region, characterized in that the reception

points arranged within said observation region are divided into groups for singular or plural reception points, and said reception determination processing is applied to reception point groups including the reception points to which said reception determination processing is needed to be applied, and characterized in that hierarchical grouping processing is applied to said reception points so that a structure in which a reception point group having a large scale involves a smaller scale of plural reception point groups is formed, and hierarchical structure information constructed of information with respect to an implication relationship of the reception point groups between different hierarchies and the reception points included in the reception point groups is constructed. This particular combination of elements claimed as Applicant's invention is neither taught nor suggested by the prior art.

Applicant's independent claim 3 is drawn to a reception determination method of a ray in which, a path of a ray provided within an observation region is predicted, and reception determination processing is applied to reception points of said ray, which are arranged in advance within said observation region, characterized in that the reception points arranged within said observation region are divided into groups for singular or plural reception points, and said reception determination processing is applied to reception point groups including the reception points to which said reception determination processing is needed to be applied, and characterized in that screening processing for leaving only said reception point groups including the reception points inside, to which said reception determination processing is need to be applied, is applied to said reception point groups inside said observation region, and said reception

determination processing of the ray and the reception points is applied to only the reception points included in said finally screened reception point groups. This particular combination of elements claimed as Applicant's invention is neither taught nor suggested by the prior art.

Applicant's independent claim 13 is drawn to a radio wave propagation characteristic estimation method characterized in that, estimation of radio wave propagation in an observation region is made by predicting a path of a ray provided within said observation region, and reception determination processing is applied to reception points of said ray, which are arranged in advance within said observation region, characterized in that the reception points arranged within said observation region are divided into groups for singular or plural reception points, and said reception determination processing is applied to reception point groups including the reception points to which said reception determination processing is needed to be applied. This particular combination of elements claimed as Applicant's invention is neither taught nor suggested by the prior art.

Applicant's independent claim 15 is drawn to a reception determination system of a ray in which a path of a ray provided within an observation region is predicted, and reception determination processing is applied to reception points of said ray, which are arranged in advance within said observation region, said reception determination system comprising, grouping means for grouping the reception points arranged within said observation region for singular or plural reception points, and reception determination means for applying said reception determination processing to reception

point groups including the reception points to which said reception determination processing is needed to be applied, wherein said grouping means applies hierarchical grouping processing to said reception points so that a structure in which a reception point group having a large scale involves a smaller scale of plural reception point groups is formed, and constructs hierarchical structure information constructed of information with respect to an implication relationship of the reception point groups between different hierarchies and the reception points included in the reception point groups. This particular combination of elements claimed as Applicant's invention is neither taught nor suggested by the prior art.

Applicant's independent claim 16 is drawn to a reception determination system of a ray in which a path of a ray provided within an observation region is predicted, and reception determination processing is applied to reception points of said ray, which are arranged in advance within said observation region, said reception determination system comprising, grouping means for grouping the reception points arranged within said observation region for singular or plural reception points, reception determination means for applying said reception determination processing to reception point groups including the reception points to which said reception determination processing is needed to be applied, and screening means for applying screening processing for leaving only said reception point groups including the reception points inside, to which said reception determination processing is need to be applied, to said reception point groups inside said observation region, and said reception determination means applies said reception determination processing of the ray and the reception points to only the

reception points included in said finally screened reception point groups. This particular combination of elements claimed as Applicant's invention is neither taught nor suggested by the prior art.

Applicant's independent claim 26 is drawn to a radio wave propagation characteristic estimation system characterized in that estimation of radio wave propagation is made, said radio wave propagation characteristic estimation system comprising, a reception determination system of a ray, in which a path of a ray provided within an observation region is predicted, and reception determination processing is applied to reception points of said ray, which are arranged in advance within said observation region, grouping means for grouping the reception points arranged within said observation region for singular or plural reception points, and reception determination means for applying said reception determination processing to reception point groups including the reception points to which said reception determination processing is needed to be applied. This particular combination of elements claimed as Applicant's invention is neither taught nor suggested by the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin Y. Lee whose telephone number is (571) 272-5258. The examiner can normally be reached on M - Thu 9:30 to 8:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached on (571)272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Justin Y Lee/
Examiner, Art Unit 2617
7/20/10
/Patrick N. Edouard/
Supervisory Patent Examiner, Art Unit 2617